

**CUSTOMER NO.: 24498****Serial No. 10/521,398**

Reply to Final Office Action dated: 4/23/07

Response dated: 07/06/07

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PU030148****JUL 06 2007****REMARKS**

In the Office Action, the Examiner stated that claims 1-27 are pending in the application and that claims 1-27 stand rejected. None of the Applicant's claims are amended by this response.

In view of the following discussion, the Applicant respectfully submits that none of these claims now pending in the application are rendered obvious under the provisions of 35 U.S.C. § 103. Furthermore, the Applicant also submits that all of these claims now satisfy the requirements of 35 U.S.C. §101. Thus, the Applicant believes that all of these claims are now in allowable form.

**Rejections****A. 35 U.S.C. § 101**

Claims 15-27 were rejected under 35 U.S.C. 101 as allegedly being directed to a recording medium storing nonfunctional descriptive material. The Applicant respectfully disagrees.

With regards to Warnerdam, 33 F.3d at 1361, cited by the Examiner, the 'data structure' patent claim at issue which was held nonstatutory read as follows:

"6. A data structure generated by the method of any of Claims 1 through 4."

Warnerdam held that such patent claim regarding data structure generated from the process of making "bubble hierarchy" for controlling motion of objects to avoid collision with other objects lacked statutory subject matter, as data structure did not imply physical arrangement of contents of memory.

The Applicant strongly disagrees with the Examiner's allegation that claims 15-27 are directed to a 'data structure' as per Warnerdam. The present claims 15-27 are not claimed in that manner. Instead, the Applicant asserts that the present claim 15 is directed to a functional, physical arrangement of layer elements on a storage medium, namely, an interleaved base and enhancement layer on a DVD medium. More specifically, the Applicant's claim 15 specifically recites:

"A DVD medium comprising:  
a base layer comprising base data including cells associated with  
base interleave units representing a first version of a digital recording; and

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an enhancement layer comprising enhancement data including cells associated with enhancement interleave units, wherein said cells associated with said enhancement interleave units can be combined with said cells associated with said base interleave units data to represent a second version of said digital recording;

wherein said base layer and said enhancement layer are interleaved."

In the Applicant's invention, the functionality of the interleaved layers as claimed in claim 15 is clearly apparent, as such interleaved design advantageously enables the creation of DVDs which may be used to store both SD and HD versions of a movie on a single side of a DVD, as mentioned in the specification, e.g., at least on page 2, lines 4-25.

Accordingly, the DVD medium as presently claimed in claim 15 comprises a physical, interconnected and functional arrangement of contents of a memory medium (interleaved base and enhancement layers), and thus is asserted to comprise statutory subject matter which falls within the boundaries of 35 U.S.C. §101.

**B. 35 U.S.C. § 103**

The Examiner rejected the Applicant's claims 1-12 and 15-25 under 35 U.S.C. § 103(a) as being unpatentable over Hughes, Jr. et al. (U.S. Patent Application No. 2004/0033061, hereinafter "Hughes") in view of Horne et al. (U.S. Patent No. 5,515,377, hereinafter "Horne"). The rejection is respectfully traversed.

The Applicant respectfully submits that Hughes fails to teach, suggest or render obvious at least the Applicant's claim 1, which specifically recites:

"A method of providing multiple versions of a digital recording comprising the step of multiplexing a base layer with an enhancement layer, said base layer having base data including cells associated with base interleave units and representing a first version of the digital recording, and said enhancement layer having enhancement data including cells associated with enhancement interleave units, wherein said cells associated with said enhancement interleave units which can be combined with said cells associated with said base interleave units data to represent a second version of the digital recording."

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More specifically, the Applicant's claims 1 and 15 recite, *inter alia*, "...said base layer having base data including cells associated with base interleave units and representing a first version of the digital recording" and "an enhancement layer having enhancement data including cells associated with enhancement interleave units, wherein said cells associated with said enhancement interleave units can be combined with said cells associated with said base interleave units to represent a second version of the digital recording."

In contrast to the invention of the Applicant, Hughes teaches a layered encoding system in which a DVD is provided with one data storage track used to store a base layer and a second data storage track to store an enhancement layer. In Hughes, a standard definition is generated by decoding the base layer data and a high resolution image is generated by decoding and combining both the base layer data and the enhancement layer data. However, Hughes fails to disclose or suggest at least a base layer having base data including cells associated with base interleave units and representing a first version of the digital recording, and enhancement data including cells associated with enhancement interleave units, wherein cells associated with said enhancement interleave units can be combined with said cells associated with said base interleave units to represent a second version of the digital recording, essentially as now claimed in amended claims 1 and 15. In fact in the Final Office Action, the Examiner also concedes that Hughes fails to disclose the feature of the base layer data including cells associated with the base interleaving units and the enhancement layer data including cells associated with the enhancement interleave units as claimed in the Applicant's claims.

Even further, the Applicant submits that the teachings of Horne fail to bridge the substantial gap between the teachings of Hughes and the Applicant's invention, at least with respect to the Applicant's claims 1 and 15. That is, the Applicant submits that Horne absolutely fails to teach, suggest or make obvious at least the feature of the base layer data including cells associated with the base interleaving units and the enhancement layer data including cells associated with the enhancement interleave units as claimed in the Applicant's claims. The Applicant further submits that Horne absolutely fails to teach, suggest or make obvious "a base layer comprising base data including cells associated with base

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interleave units **representing a first version of a digital recording** and "wherein said cells associated with said enhancement interleave units can be combined with said cells associated with said base interleave units data **to represent a second version of said digital recording**" as taught in the Applicant's Specification and claimed by at least the Applicant's independent claims.

More specifically, Horne teaches an adaptive video encoder for two-layer encoding of video signals on ATM (asynchronous transfer mode) networks. In the invention of Horne, a quality of video images received at the remote end of an ATM network capable of transmitting data at high and low priorities is greatly improved at high cell loss levels by employing a two-layered video encoding technique that adapts the method for encoding information transmitted in the low-priority bit-stream to the rate of cell loss on the network so that compression efficiency and image quality are high when the network load is low and resiliency to cell loss is high when the network load is high. That is, in the Background of the Invention section of Horne, Horne states that a problem exists in the prior art because each network source is allocated less bandwidth than its peak requirement which results in a nonzero probability that cells will be lost or delayed during transmission. As such, Horne's invention is directed to providing a method and apparatus that encodes video with good compression efficiency when network load is low, but with good resiliency to cell loss when network traffic becomes congested. (See Horne, Background).

The Applicant submits that the teachings and invention of Horne are directed to a method and apparatus which provides a two-layered video encoding technique that adapts an algorithm used for encoding information transmitted in a low-priority bit-stream to the level of cell loss on the network so that compression efficiency and image quality are high when the network load is low and resiliency to cell loss is high when the network load is high. (See Horne, Abstract). That is, in the invention of Horne, an enhancement layer bit-stream EL is generated by encoding the difference between the original video signal VIDIN, and the unsampled base layer image, where the base layer image is produced by locally decoding base layer bit-stream BL by two-layer video encoder. More specifically, a base layer and enhancement layer in Horne represent two layers of a single version of an image. More specifically, there is absolutely no teaching or

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suggestion in Horne for "a base layer comprising base data including cells associated with **base interleave units representing a first version of a digital recording**" and "wherein said cells associated with said enhancement interleave units can be combined with said cells associated with said base interleave units data to **represent a second version of said digital recording**" as taught in the Applicant's Specification and claimed by at least the Applicant's independent claims.

That is, in the invention of the Applicant, the Applicant teaches and claims base interleave units representing a first version (e.g., SD version) of a digital recording and an enhancement layer including enhancement data including cells associated with enhancement interleave units where the cells associated with the enhancement interleave units can be combined with the cells associated with said base interleave units data to represent a second version (e.g., HD version) of said digital recording. In contrast to the invention of the Applicant, Horne merely teaches a base layer comprising enough basic video information for a decoder to reconstruct a minimally acceptable image, which is transmitted by an ATM network in a high-priority bit-stream and an enhancement layer, which is used to enhance the quality of the image and is transmitted in a low-priority bit-stream. There is no teaching or suggestion in Horne for base interleave units representing a first version (e.g., SD version) of a digital recording and where the cells associated with the enhancement interleave units can be combined with the cells associated with said base interleave units data to represent a second version (e.g., HD version) of said digital recording as taught and claimed by the Applicant.

In further contrast to the invention of Horne, in the Applicant's invention cells may be associated with one or more base/enhancement interleave units. This facilitates the creation of at least two program chains (one each for SD playback and HD playback). The SD program chain can link together the cells associated with the base interleave units and is recognizable by an SD-DVD player. The enhancement program chain can be recognized by hybrid HD-DVD players and can link together the cells associated with the base interleave units and the cells associated with the enhancement interleave units in an order appropriate for HD playback. There is no such teaching or suggestion in Horne for such cells and linking.

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As such and for at least the reasons recited above, the Applicant respectfully submits that Hughes and Horne, alone or in any allowable combination, absolutely fail to teach, suggest or make obvious at least the Applicant's claim 1. Therefore, the Applicant submits that for at least the reasons recited above, the Applicant's claim 1 is not rendered obvious by the teachings of Hughes and Horne, alone or in any allowable combination, and, as such, claim 1 fully satisfies the requirements of 35 U.S.C. § 103 and is patentable thereunder.

Likewise, the Applicant's independent claim 15 recites similar relevant features as recited in the Applicant's claim 1. As such and for at least the reasons recited above, the Applicant submits that independent claim 15 is also not rendered obvious by the teachings of Hughes and Horne, alone or in any allowable combination, and, as such, fully satisfies the requirements of 35 U.S.C. § 103 and is patentable thereunder.

Furthermore, the Applicant's dependent claims 2-12 and 16-25 depend either directly or indirectly from the Applicant's independent claims 1 and 15 and recite additional features thereof. As such, the Applicant submits that at least because the Applicant's claims 1 and 15 are not rendered obvious by the teachings of Hughes and Horne, alone or in any allowable combination, the Applicant further submits that the Applicant's dependent claims 2-12 and 16-25, which depend either directly or indirectly from the Applicant's claims 1 and 15, are also not rendered obvious by the teachings of Hughes and Horne, alone or in any allowable combination, and, as such, fully satisfy the requirements of 35 U.S.C. § 103 and are patentable thereunder.

The Applicant reserves the right to establish the patentability of each of the claims individually in subsequent prosecution.

**C. 35 U.S.C. § 103**

The Examiner rejected the Applicant's claims 13-14 and 26-27 under 35 U.S.C. § 103(a) as being unpatentable over Hughes and Horne as applied to claims 1 and 15-16, and further in view of Official Notice. The rejection is respectfully traversed.

The Examiner applied the teachings of Hughes and Horne for the rejection of claims 13-14 and 26-27 as applied above for the rejection of claims 1 and 15-16.

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As recited above, the Applicant respectfully submits that the teachings of Hughes and Horne, alone or in any allowable combination, absolutely fail to teach, suggest or make obvious the Applicant's claims 1 and 15-16 for at least the reasons recited above. That is, the rejection of claims 13-14 and 26-27 is based, in part, on the contention that Hughes and Horne discloses or suggests the features of claims 1 and 15-16, from which such claims respectively depend. However, in light of the above remarks with respect to claims 1 and 15-16 distinguishing the Applicant's claims over Hughes and Horne, alone or in any allowable combination, it is clear that the combination of Hughes, Horne and the Official Notice is legally deficient, since, at the very least, as explained above, the teachings of Hughes and Horne, alone or in any allowable combination, do not disclose, suggest or make obvious the technical features of the Applicant's claims 1 and 15-16 as describe above and for the reasons described above, from which claims 13-14 and 26-27 respectively depend.

As such, the Applicant respectfully submits that at least because Hughes and Horne, alone or in any allowable combination, fail to teach, suggest or make obvious the Applicant's claims 1 and 15-16 and because the Examiner's Official Notice also fails to render obvious at least the Applicant's claims 1 and 15-16, the Applicant further submits that claims 13-14 and 26-27 are patentably distinct and non-obvious over Hughes, Horne and/or Official Notice, alone or in any allowable combination, for at least the reasons set forth above with respect to claims 1 and 15-16.

### Conclusion

Thus the Applicant submits that none of the claims, presently in the application, are rendered obvious under the provisions of 35 U.S.C. § 103. Furthermore, the Applicant also submits that all of these claims now satisfy the requirements of 35 U.S.C. §101. Accordingly, both reconsideration of this application and its swift passage to issue are earnestly solicited.

If however, the Examiner believes that there are any unresolved issues requiring adverse final action in any of the claims now pending in the application, or if the Examiner believes a telephone interview would expedite the prosecution of

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the subject application to completion, it is respectfully requested that the Examiner telephone the undersigned.

No fee is believed due. However, if a fee is due, please charge the additional fee to Deposit Account No. 07-0832.

Respectfully submitted,

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